PORTUGUESE REGIONAL DIFFERENCES IN THE WINE GRAPES MYCOFLORA

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The recent discovery of mycotoxins in wine, in particular ochratoxin A, caused concern and motivated an extensive survey to the mycoflora of Portuguese grapes. It is known that the mycoflora of agricultural commodities can vary according to the geographical origin, and therefore, regional differences in the mycoflora of Portuguese were investigated. Four regions were selected for a 3-year study: Alentejo, Douro, Ribatejo and Vinhos Verdes. The mycoflora of grapes was evaluated by plating methods. A total of 32 grape samples were taken, of 50 berries each. The differences in the mycoflora of grapes between regions were analyzed using the non-parametric test Kruskal-Wallis H. Ostensibly, the classification of the grapes into their geographical origin based on its mycoflora was attempted using a decision tree algorithm (C4.5) based on the Shannon Information Theory. Of the 27 fungal genera identified, 3 varied its incidence significantly according to the region of origin of the samples: *Aspergillus*, *Botrytis* and *Ulocladium*. The only species that varied significantly its frequency between regions was *A. niger* aggregate. Six *Penicillium* species differed significantly between regions: *P. brevicompactum*, *P. citrinum*, *P. glabrum/spinulosum*, *P. expansum*, *P. implicatum* and *P. thomii*. Using decision trees it was possible to classify successfully 91% of the samples according to 3 sample classes: Vinhos Verdes, Douro and South samples (Alentejo and Ribatejo). The classification was based on the incidence of *A. niger* and *P. thomii* in the grape samples. The estimated predictive ability of the model in the 3 classes was 82%.
The data presented here indicate that grapes are consistently exposed to a particular mycoflora that varies according its geographical origin, which may be of importance to establishing risk areas for mycotoxin contamination of grapes and wine.

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